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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
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EXAMINER

WEST, JEFFREY R

ART UNIT PAPER NUMBER

2857

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/880,329

Applicant(s)

EDEN, JOHN S.

Examiner

Jeffrey R. West

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,009,541 to Liu et al. in view of U.S. Patent No. 6,381,656 to Shankman.

Liu discloses an apparatus for performing an extensive diagnostic test in conjunction with a BIOS test routine comprising a diagnostic test execution engine (column 3, lines 66-67) that receives input commands from a user and initiates processing of the input commands (column 4, lines 29-49) and a test routine (column 3, lines 2-3). Liu discloses that the testing platform can concurrently include and employ user input/output components (column 3, lines 55-59), result handling components (i.e. display) (column 4, lines 38-41), computing resource components (i.e. data storage) (column 3, lines 10-13), and inherently communication components to transfer data between the I/O, display, and data storage components, adapted to the test engine and corresponding routine (column 2, lines 3-7 and 25-27).

Liu discloses that changes to the testing process entered by the user modifies the test routine performed and the corresponding steps carried out by the execution engine, thereby adapting the test routine and the execution engine to each other (column 4, lines 37-49). Liu also discloses test executor components applicable to link the test execution engine to a test routine in a common executable code that allows the test routine to be executed by the engine without any I/O linking (column 3, lines 36-45), to a separate executable in a memory of the computing environment, or to an external test routine stored in an external hard disk (column 3, lines 10-13).

Liu also discloses that the platform can handle and execute multiple test routines concurrently (column 6, lines 24-30) and includes a test sequencing component that controls the execution and order of multiple test routines in accordance with a mode component that receives and interprets user inputs as commands to call to the desired type of testing (column 3, lines 20-24 and column 4, lines 29-49).

With respect to claims 13 and 14, Liu discloses that a first mode component controls the execution of a first test mode and, upon the detection that a user desires deactivation of the first test mode, through an input command, a second mode component activates a second test mode. Liu then discloses that upon the detection that a user desires deactivation of the second test mode, through an input command, the first test mode is reactivated (column 4, lines 29-49).

Although not specifically disclosed, it is considered that the invention of Liu executes the aforementioned test routines using a corresponding operating system because the invention of Liu does disclose implementing the invention within a

general purpose or specific function computer (column 2, lines 66-67) and it is well known that general purpose and specific function computers contain an operating system for carrying out its functions. It is also considered to be well-known in the art that general purpose computers and specific function computers are platforms that can concurrently include multiple user I/O devices (i.e. keyboard, mouse, monitor), result handing components (i.e. printers, disks, databases), computing components (i.e. operating system, processors), and communication components (i.e. busses, cables, network connections).

Further, it is noted that claim 10 recites the limitation, "may be executed". It has been held that the recitation that an element is "capable of" performing a function is not a positive limitation but only requires the ability to so perform and therefore does not constitute a limitation in any patentable sense. Similarly, claims 4 and 6 recite the limitation, "can concurrently employ."

As noted above, the invention of Liu teaches many of the features of the claimed invention and while the invention of Liu does teach a test routine execution method comprising receiving inputs from a user, through an input interface, and communicating over communication hardware to software routines, display/result handing components, and hardware devices, such as disk storage devices, Liu does not specifically disclose adaptation components to shield the test routine and execution engine from hardware and software dependencies.

Shankman teaches a computer input/output subsystem monitor for testing, debugging, and performance analysis using an intelligent I/O architecture (column 1,

lines 6-10) comprising a plurality of I/O processors for handling data within the system and a virtual adapter associated with each I/O processor, wherein the adapters conform to an intelligent I/O ("I₂O") architecture (column 4, lines 15-31) that adapts the monitoring execution system to the operating system with its corresponding memory management and timer interfaces (column 2, lines 20-30). Shankman also teaches that the I/O devices connected to the system through the adapters includes user I/O interfaces (column 3, lines 16-19 and column 20, lines 29-40), result handing printers (column 21, lines 51-55), target databases/disk files (column 19, lines 15-47), and communication hardware (column 15, lines 21-27)

It would have been obvious to one having ordinary skill in the art to modify the invention of Liu to include adaptation components to shield the test execution engine and test routine from component dependences, as taught by Shankman, because Liu does provide the detection and execution of specific test routines through the implementation of an interrupt signal (column 2, lines 41-45) and Shankman suggests that using an I₂O architecture offloads the interrupts generated by the I/O devices to special purpose I/O processors that have been designed to quickly service interrupts and protect the server's CPU from the performance degradations associated with I/O interrupts in the conventional personal computer architecture as well as reduced the software support burden on I/O card manufactures that have been imposed because of conventional architecture (column 2, lines 11-19). The combination also would have provided a convenient, thorough method for measuring overall computing system performance taking into account all of the devices of the



system using compatible communication in order to display to the user a clear measurement summary (column 2, lines 64-67 and column 3, lines 13-19).

Response to Arguments

3. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent No. 4,489,414 to Titherley teaches computer peripheral testing equipment using a self contained, portable device that can be used to test a plurality of peripherals using plug-in firmware modules.

U.S. Patent No. 5,566,088 to Herscher et al. teaches a modular radio test system and method comprising a first group of generic test elements common to all types of radios and a second group of test elements specific to each of multiple types of radios contained in a pluggable module for insertion into the tester that couples the various test elements into a configuration required to test the specific radio type.

U.S. Patent No. 4,782,292 to Gilfoy et al. teaches a portable servoactuator test system including a control interface that allows the operator to select specific predetermined tests to be conducted upon the servoactuator.



U.S. Patent No. 6,609,219 to Patterson teaches a data corruption testing technique for a hierarchical storage system comprising a test routine and test execution engine that receives I/O commands using an I/O interrupt.

FOLDOC Free On-Line Dictionary of Computing defines "Intelligent Input/Output" architecture as a "specification which aims to provide an I/O device driver architecture that is independent of both the specific device being controlled and the host operating system."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. West whose telephone number is (703)308-1309. The examiner can normally be reached on Monday through Friday, 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (703)308-1677. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7382 for regular communications and (703)308-7382 for After Final communications.



Application/Control Number: 09/880,329
Art Unit: 2857

Page 8

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

jr
September 8, 2003


MARC S. HOFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800